

REMARKS

Applicant has considered all points made by the Examiner in the Office Action and has responded to same in order to ensure compliance with the applicable rules.

1. Drawings.

The informal drawings filed February 8, 2002 have been approved by the Examiner. New drawings in compliance with 37 C.F.R. § 1.84 are attached hereto.

2. 35 U.S.C. § 132 Rejections – New Matter.

The Examiner cited several instances within the specification deemed new matter in contravention of 35 U.S.C. § 132. Each reference will be addressed in turn.

a. Page 4, Lines 14 – 16.

This matter has been cancelled by amendment to the Specification above.

b. Page 4, Line 17.

Applicant respectfully traverses the characterization of the language “caused by the invented baffle plate” as new matter. This clause refers to the increased turbulence of flow within the heat transfer tube. Support for this language may be found at Column 4, Lines 8-14 of U.S. Patent No. 5,901,641 which teaches that “[a]s the heated air flows through heat transfer tube 16 it is deflected by tabs 42, increasing the turbulence of the flow....” The tabs (item 42) are formed by “bending a portion of [baffle] plate 40 outwardly...” (Column 3, Line 51). Therefore, the tabs are an inherent part of the baffle plate and the baffle plate does increase the turbulence of flow.

c. Page 4, Line 18.

Applicant respectfully traverses the characterization of “hot gases” as new matter. Support for the use of “hot gases” in this context may be found at Column 1, Lines 16-17, “[t]he oil may be headed using a flow of heated gas that is forced or drawn through a heat exchanger,” Column 1, Lines 37-38, “improve the heat transfer from heated gas flowing through heat transfer conduits,” and Column 3, Lines 13-17, “[d]ue to its efficiency and economic availability, the heat exchange fluid

generally used in the present invention and in prior art gas fryers is air; however, other gaseous fluids or liquids may of course also be considered....”

d. Page 5, Lines 10-11.

This matter has been cancelled by amendment to the Specification above.

e. Page 5, Lines 18-20.

Applicant respectfully traverse the characterization of “As shown in Figs. 3-5 and 7-10, the relationship of tabs 42 on the baffle plate 40 is to generally present alternating sizes, arrangements and angles to the flowing heated gas and alternating from extending from first surface 43 and then second surface 45, for the purpose of increasing turbulence” as new matter.

Support for this language may be found at Column 4, Lines 60-63, “The number and placement and size of tabs 42 associated with each plate 40 can vary, depending on the flow characteristics that are desired for that particular heat transfer tube.”

In addition, Figures 6-9 illustrate varying sizes, arrangements, and angles of tabs. “[D]rawings alone may be sufficient to provide the ‘written description of the invention’ required by § 112, first paragraph.” *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1565 (Fed. Cir. 1991) (emphasis omitted).

f. Page 6, Line 1.

Applicant respectfully traverses the characterization of “flowing hot gases” as new matter. As noted above, support for the use of “hot gases” in this context may be found at Column 1, Lines 16-17, “[t]he oil may be heated using a flow of heated gas that is forced or drawn through a heat exchanger,” Column 1, Lines 37-38, “improve the heat transfer from heated gas flowing through heat transfer conduits,” and Column 3, Lines 13-17, “[d]ue to its efficiency and economic availability, the heat exchange fluid generally used in the present invention and in prior art gas fryers is air; however, other gaseous fluids or liquids may of course also be considered....”

That the hot gases must “flow” so as to effectively function as a heat transfer agent is well known in the art. Further support for the use of “flowing hot gases” may be found in Figure 3, Item

B, and Column 4, Lines 8-14, "[a]s the heated air flows through heat transfer tube 16 ... illustrated by arrows B...."

In light of the above, Applicant respectfully submits that there is no new matter within the amended Specification respectfully requests the Examiner to withdraw the rejection under 35 U.S.C. § 132.

3. **Claim Objections.**

Claims 1, 6-9, 12, 14-19, and 22-24 were objected to because of informalities. Specifically, claim 1 was objected to because it did not end in a period. It is understood by Applicant that claims 6-9, 12, 14-19, and 22-24 were objected to because they depend from claim 1. Applicant has amended claim 1 to correct the complained of informality.

4. **35 U.S.C § 112 Rejections.**

Claims 10, 11, 13, 20, 21, and 25-43 stand rejected under 35 U.S.C. § 112, first paragraph, for failing to comply with the written description requirement. Specifically, the Examiner cited language within each claim as being new matter.

Applicant respectfully traverses these rejections and asserts that support for each claim may be found within the specification and claims of the '641 patent. Each rejected claim will be addressed in turn.

a. **Claim 10.**

In claim 10, the Examiner cited "the crease of at least one tab is positioned directly downstream with respect to the flow of heating fluid, of the web between two tabs which are adjacent and upstream of at least one tab" as new matter. This claim is an inherent feature of Applicant's invention. Referring to Figure 8, it will be noticed that web 46 is positioned between two tabs 42. Immediately downstream, with respect to the flow of the heating fluid, is the crease for another tab. This configuration may also be seen in Figure 9. Because drawings alone are sufficient to meet the written description requirement of § 112, *Vas-Cath*, 935 F.2d at 1565, this claim cannot constitute new matter.

b. Claim 11.

In claim 11, the Examiner cited "crease of each tab is upstream ... of a main body of the each tab" as new matter. This claim is an inherent feature of Applicant's invention. Referring to Figure 6, it will be noticed that each crease 44 is positioned directly upstream, with respect to the flow of the heating fluid, of each tab 42.

c. Claim 13.

In claim 13, the Examiner cited "the crease of at least one tab ... upstream of a main body of at least one tab ..." as new matter. Support for this claim may be found at Column 4, Lines 30-33, "plate 40 may be oriented so that its leading and trailing edges are reversed, that is, the leading edge will be crease 44 and the trailing edge will be the outermost edge of tab 42 with respect to plate 40," and Column 4, Lines 36-38, "crease 44 of each tab 42 is one of upstream or downstream, with respect to the flow of heating fluid, of the main body of its tab 42."

d. Claim 20.

In claim 20, the Examiner cited "a portion of the baffle plate has a greater number of tabs than an equally sized portion of the baffle plate which is upstream, with respect to the flow of the heading fluid, of the portion of the baffle plate" as new matter. This claim is an inherent feature of Applicant's disclosure. Referring to Figure 9, it will be seen that the number of tabs on the downstream (right) side of the figure is greater than the number of tabs on the upstream (left) side of the figure.

e. Claim 21.

In claim 21, the Examiner cited "the number of tabs per unit length increases along the baffle plate in a downstream direction with respect to the flow of heading fluid" as new matter. Support for this claim may be found at Column 2, Lines 21-23, "[t]he number of tabs per unit length increases along the baffle plate in a downstream direction with respect to the flow of heating fluid." Further support may be found at Column 5, Rows 52-54, "the number of tabs 42 per unit length of plate 40 increases along plate 40 in a downstream direction to provide increased heat transfer."

f. Claim 25.

In claim 25, the Examiner cited “the crease of at least one tab being directly downstream ... of the web between two other tabs which are adjacent and upstream,” as new matter. Support for this claim may be found at Column 2, Rows 18-21, “[t]he crease of at least one tab is directly downstream, with respect to the flow of heading fluid, of the web between two other tabs which are adjacent and upstream of the at least one tab.”

g. Claim 26.

In claim 26, the Examiner cited “the baffle plate being positioned within the heat transfer conduit and shaped so that the tabs are capable of deflecting the heating fluid so that the heating fluid is capable of flowing (1) through the holes, (2) between the tabs, (3) adjacent to the webs and (4) between the tabs and the heat transfer conduit so the baffle plate, tabs, and holes are capable of collectively causing increased turbulence of the heating fluid passing through the heat transfer conduit, the increased turbulence improving heat transfer from the heating fluid within the heat transfer conduit to the shortening within the vat of the deep fryer system as compared to a similar heat exchanger for a deep fryer system which does not utilize a baffle plate” as new matter. Referring to Figure 3, it is seen that “[a]s the heated air flows through heat transfer tube 16 it is deflected by tabs 42, increasing the turbulence of the flow within heat transfer tube 16, illustrated by the arrows B shown in FIG. 3. The increased turbulence in heat transfer tube 16 thereby enhances the heat transfer from the heated air, through heat transfer tube 16, to the shortening in the vat.” (Column 4, Lines 8-14). Figure 3 also illustrates the flow of heating fluid through holes, between tabs, and adjacent to webs.

h. Claim 27.

In claim 27, the Examiner cited “a plurality of tabs are positioned directly downstream ... of the web between two tabs which are adjacent and downstream of the plurality of tabs” as new matter. Support for this claim may be found at Column 2, Rows 18-21, “[t]he crease of **at least one tab** is directly downstream, with respect to the flow of heating fluid, of the web between two other tabs....” (emphasis added). “Use of the phrase ‘at least one’ means that there could be only one or more than one.” *Rhine v. Casio, Inc.*, 183 F.3d 1342, 1345 (Fed. Cir. 1999).

i. Claim 29.

In claim 29, the Examiner cited "... at least six rows of tab/hole pairs ... at least four tab/hole pairs and at least three webs ... the tab/ hole pairs are arranged on the first surface of the baffle plate symmetrically about the center line of the baffle plate ... the baffle plate is positioned and shaped so that the tabs ... capable of flowing (1) through the holes, (2) between the tabs, (3) adjacent the webs and (4) between the tabs ... causing increased turbulence ... the increased turbulence improving heat transfer from the heating fluid ..." as new matter.

Applicant has amended Claim 29 to call for at least five rows of tab/hole pairs rather than six. Support for this amended claim may be found in Figure 8 wherein it is seen that there are at least five rows of tab/hole pairs, each row extending in a direction substantially perpendicular to the longitudinal axis L of the baffle plate and each row having at least four tab/hole pairs and at least three webs.

j. Claim 30.

In claim 30, the Examiner cited "at least a portion of the webs are positioned directly upstream ... of a tab located in an immediately downstream row of tabs..." as new matter. This claim is an inherent feature of Applicant's disclosure. Referring to Figures 8 and 9, it will be seen that the number of webs are indeed located directly upstream of a tab located in an immediately downstream row of tabs.

k. Claim 32.

In claim 32, the Examiner cited "the tabs are located, and shaped ... causing increased turbulence of the heating fluid .. to improve heat transfer from the heating fluid..." as new matter. Support for this claim may be found at Column 5, Lines 20-25, "By angling the tabs upwardly and downwardly as well as outwardly, the flow of heated air is deflected up and down as well as left and right ... within the heat transfer tubes, thereby providing additional mixing of the heated air." Further support may be found at Column 4, Lines 63-67, "in the case where heated air is flowing from left to right in the embodiment illustrated in FIG. 5, tabs 42 are oriented in such a manner as to

direct the heated air primarily from the center towards the walls of the heat transfer tube 16 to improve the heat transfer at the walls.” Still further support may be found at Column 3, Lines 61-65, “It is also to be appreciated that tabs 42 may have a shape other than the substantially rectangular shape shown in FIG. 2, e.g., circular, oval, or any other suitable shape which will become obvious to those skilled in the art given the benefit of this disclosure.”

1. Claim 33.

In claim 33, the Examiner cited “each tab extends outwardly at an acute angle ... deflecting the heating fluid through its corresponding hole ... baffle plate” as new matter. Support for this claim may be found at Column 3, Lines 39-41, “Tabs 42 preferably extend outwardly at an acute angle with respect to the surface from which they extend.” Further support may be found at Column 4, Lines 33-36, “outwardly extending tabs 42 serve to deflect the heated air flowing through heat transfer tube 16 increasing turbulence and enhancing heat transfer.”

m. Claim 37.

In claim 37, the Examiner cited “...and wherein the tabs are positioned ... heating fluid is flowable through the holes, between the tabs and the heat transfer conduit ... causing increased turbulence ... to improve heat transfer ... for a deep fryer system” as new matter. Referring to Figure 3, it is seen that “[a]s the heated air flows through heat transfer tube 16 it is deflected by tabs 42, increasing the turbulence of the flow within heat transfer tube 16, illustrated by the arrows B shown in FIG. 3. The increased turbulence in heat transfer tube 16 thereby enhances the heat transfer from the heated air, through heat transfer tube 16, to the shortening in the vat.” (Column 4, Lines 8-14). Figure 3 also illustrates the flow of heating fluid through holes, between tabs, and adjacent to webs.

n. Claim 38.

In claim 38, the Examiner cited “the crease of a plurality of tabs ... is directly downstream ... of the creases of the tabs in the rows of tabs ... directly downstream...” as new matter. This configuration of tabs and creases may be seen in Figure 6. In Figure 6, it is seen that a plurality of tabs 42 are directly upstream of a plurality of creases 44. It is also seen in Figure 6 that “longitudinal

axis A of each tab 42 is substantially parallel to longitudinal axis L of plate 40.” (Column 5, Lines 10-12).

o. Claim 41.

In claim 41, the Examiner cited “at least six rows of tabs on the baffle plate...” as new matter. Within the current specification and figures, a row consists of a vertical set of tabs and webs which are generally perpendicular to the longitudinal axis of the baffle plate. (Column 1, Lines 52-55, “A plurality of webs are provided with each web separating a tab from other tabs adjacent in a direction substantially perpendicular to the longitudinal axis of the tab.”) Referring to Figures 7, 8, and 9, it is seen that each illustrated baffle plate consists of at least six rows of tabs.

p. Claim 42.

In claim 42, the Examiner cited “the baffle plate ... heating fluid is flowable through the holes, between the tabs, adjacent to the webs and between the tabs and the heat transfer conduit ... causing increased turbulence ... to improve heat transfer” as new matter. Referring to Figure 3, it is seen that “[a]s the heated air flows through heat transfer tube 16 it is deflected by tabs 42, increasing the turbulence of the flow within heat transfer tube 16, illustrated by the arrows B shown in FIG. 3. The increased turbulence in heat transfer tube 16 thereby enhances the heat transfer from the heated air, through heat transfer tube 16, to the shortening in the vat.” (Column 4, Lines 8-14). Figure 3 also illustrates the flow of heating fluid through holes, between tabs, and adjacent to webs.

q. Claim 43.


In claim 43, the Examiner cited “a burner generates products of combustion which flow through said tube from an entrance to an exit” as new matter. Support for this claim may be found at Column 1, Lines 19-20, “A gas burner is provided to heat the gas circulating within the heat exchanger.”

CONCLUSION

In accordance with the Examiner's requirement, the Applicant has attached a supplemental declaration under 37 CFR § 1.172 and 37 CFR § 3.73(b) establishing ownership interest of the assignee in the '641 patent.

Applicant respectfully requests that this response be considered by the Examiner and a notice of allowance be entered. If the Examiner feels that a telephone conference with the undersigned would be helpful to the allowance of this application, a telephone conference is respectfully requested.

Respectfully submitted,
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